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STAT

[redacted]

11 October 1965
OW 65-1122
REF: 4063

STAT [redacted]

STAT Subject: [redacted] Task Order 2, (100,394) 65-R Advanced Stero-Rhomboid
STAT Prototype for the [redacted] Loom 70

Enclosure: (1) Monthly Progress Report Covering September 1965

Dear Sir:

In compliance with the requirements of Item (4) of the subject Contract Task Order, two (2) copies of Enclosure (1) are transmitted to you. Concurrently, three (3) copies of Enclosure (1) are being transmitted to the Contracting Officer's Technical Representative.

Very truly yours,

STAT

[redacted]

1 - Filed
3 Copies to NPLC

TAT cc: [redacted] w/(3) enclosures

CONFIDENTIAL
RELEASED

Declassification Review by NGA/DoD

STAT

MONTHLY PROGRESS REPORT

September 1965

Advanced Stereo-Rhomboid Prototype for the
STAT [redacted] Zoom 70

STAT Gov't. Contract No.: [redacted]

Customer No.: T.O. 2(100,694)65-R

GPI Librascope No.: A8-003-AA

This order is to fabricate one prototype 2x premagnification, wide-span stereo-
STAT rhomboid attachment for the [redacted] Zoom 70 Stereomicroscope.

On September 28 a meeting was held at the [redacted] STAT
STAT [redacted] in attendance.
At this meeting optical system schematics for two possible configurations of the stereo-rhomboid attachment were presented and discussed. These two configurations are shown in sketch SK-A8-003-AA-144 which is attached. Configuration B requires smaller mirrors and lends itself to easier packaging than does Configuration A. As a result Configuration B would probably be less expensive to manufacture in production quantities. Configuration B allows the rhomboid arms to be rotated to the rear of the full-span position approximately 85 degrees. Configuration A can be rotated at least 90 degrees to the rear of the full-span position.

STAT On September 29 [redacted] informed [redacted] that at least one of the two STAT
rhomboid arms must be capable of rotating 90 degrees to the rear of the full-span position. Because of this 90-degree requirement, the basic system as depicted in Configuration A was selected. This configuration will provide a separation of 40 millimeters or less between the optical axes of the rhomboid arms with the arms in the closest forward position; it will provide a maximum span of 9-1/2 inches in the full-span position, and will provide 90 degrees or greater rotation to the rear of the full-span position. With both arms at the 90 degree position the separation between the two optical axes will be approximately 4.9 inches. Based upon this mutual agreement, the [redacted] is proceeding STAT
to complete the mechanical design of the stereo-rhomboid attachment which is schematically depicted in Configuration A of sketch SK-A8-003-AA-144.

Mechanical design of the stereo-rhomboid attachment will be based upon using castings wherever it is deemed economical for production quantities. However, for the prototype unit, it is expected that those parts designed for castings will be machined from solid stock. It is anticipated that delivery of the prototype

can be improved several weeks by machining from stock rather than waiting for patterns and castings. Delivery of the prototype based on machining from stock is presently estimated to be 13 December 1965.

Regarding optical fabrication, approximately 70% of the optical test plates have been completed. Fabrication of the [redacted] prisms has been started, and all optical detail drawings are scheduled to be released for fabrication by 8 October 1965. STAT

Paint color #26373 of FED-STD-595 was selected as the best color match to the existing [redacted] Stereomicroscope and semi-gloss enamel of this color has been ordered. STAT

As reported last month, [redacted] had requested that the possibilities of using enhanced reflection coatings be investigated. This information will be submitted shortly in the form of a proposal. STAT

Approved: [redacted]
Technical Director

STAT

16 August 1965

STAT

STAT

P.O. Box 6788
Port Davis Station
Washington, D.C. 20020

STAT

Subject: Contract [ ] Task Order 2, (100,694)65-R
Advanced Stero-Rhomboid Prototype for the
STAT [ ] Zoom 70

Enclosure: (1) Monthly Progress Report Covering July 1965

Dear Sir:

In compliance with the requirements of Item (4) of the subject Contract Task Order, two (2) copies of Enclosure (1) are transmitted to you. Concurrently, three (3) copies of Enclosure (1) are being transmitted to the Contracting Officer's Technical Representative.

STAT

Very truly yours,

STAT

cc: [ ] w/(3) enclosures

STAT

MONTHLY PROGRESS REPORT

July 1965

Advanced Stereo-Rhomboid Prototype for the

STAT [ ] Zoom 70

STAT Gov't. Contract No: [ ]

Customer No: T.O. 2(100,694) 65-R

STAT [ ]

This order is to fabricate one prototype 2X premagnification, wide-span, stereo-rhomboid attachment for the [ ] Zoom 70 Stereoscope. STAT Verbal authorization to proceed with this order was received from the customer June 2 and work was initiated on this project.

On July 30 a meeting was held at the [ ] STAT [ ] STAT

STAT [ ]. At this meeting the progress to date was reviewed and is summarized below.

The stereo-rhomboid optical system which was originally proposed has some inherent disadvantages both regarding cost of manufacture and instrument performance. The disadvantages are relatively low light transmission of approxi-

STAT mately 8%, a [ ] prism which requires a roof angle tolerance of 0.5 to 1.0 seconds of arc, and precise alignment of this prism within the optical path. In view of the above disadvantages and the desire to provide the best possible instrument performance at the lowest cost, other optical designs were investigated.

STAT These other designs use either a [ ] or folded [ ] prism for image rotation STAT instead of the proposed Porro roof prism. As a result of this investigation, the optical design using the folded [ ] prism has been tentatively selected STAT for use, and this design is presently being optimized and evaluated. The time expended for this optical design review will no doubt result in providing a better instrument; however, a delivery slippage is now anticipated.

Mechanical design will be started as soon as the optical design evaluation has been completed: It is anticipated that the mechanical design will be started August 16. The delivery date of the prototype unit has now been rescheduled for November 22.

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Approved: [ ]